

Serial No.: 09/904,692
Amendment Dated: June 29, 2005
Reply to Office Action of March 29, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the above-captioned patent application:

Listing of Claims:

1. (Canceled).

2. (Canceled).

3. (Currently Amended) An incubator as recited in Claim [[2]] 62, wherein ~~said ring assembly includes at least two concentric ring components~~, each of said ~~ring components being inner and outer rings~~ are supported for rotation about a central axis of ~~said an~~ incubator housing.

4. (Canceled).

5. (Canceled).

6. (Currently Amended) An incubator as recited in Claim [[5]] 3, wherein at least one of said ~~arrays pluralities of circumferentially disposed sample element receiving areas~~ includes at least two radially adjacent sample receiving stations disposed in said areas wherein said at least one second drive mechanism ~~being~~ is capable of selectively radially moving said at least one ~~test~~ sample element between at least said at least two adjacent ~~test receiving stations~~ sample element receiving areas.

7. (Currently Amended) An incubator as recited in Claim 6, including at least one read station ~~is~~ disposed in relation to one of said ~~ring components inner and outer rings~~, such that said at least one first drive mechanism can rotate one sample element receiving ~~station of at least one array area~~ into a read position, said at least one second drive mechanism enabling a sample element to be selectively and radially moved into the read position.

8. (Original) An incubator as recited in Claim 7, including a dump station radially adjacent said read station.

9. (Original) An incubator as recited in Claim 7, wherein said read station includes a device capable of detecting an optical property of a test sample element.

10. (Original) An incubator as recited in Claim 9, wherein said device is a reflectometer .

11. (Currently Amended) An incubator as recited in Claim [[4]] 62, wherein said at least one second drive mechanism selectively and radially removes at least one sample element from said ~~ring assembly incubator~~ for later reinsertion therein.

12. (Previously Presented) An incubator as recited in Claim 7, wherein said read station includes a device capable of measuring an electrical property of a sample element.

13. (Original) An incubator as recited in Claim 12, wherein said device is an electrometer.

14. (Currently Amended) An incubator as recited in Claim [[1]] 62, wherein said sample elements include a plurality of dry slide elements, each of said dry slide element having a volume of a patient sample fluid metered thereupon prior to entry into said incubator.

15. (Currently Amended) An incubator as recited in Claim 6, wherein said at least one second drive mechanism includes ~~a~~ at least one shuttle mechanism means for radially shuttling sample elements into and out of said incubator housing.

16. (Currently Amended) An incubator as recited in Claim 15, wherein said shuttle mechanism means is circumferentially disposed immediately adjacent said at least one second drive mechanism.

17. (Currently Amended) An incubator as recited in Claim 15, wherein said shuttle mechanism means includes a reciprocating pusher blade disposed in relation to said incubator housing to shuttle at least one sample element into at least one sample element receiving station.

18. (Currently Amended) An incubator as recited in Claim 15, wherein said shuttle mechanism means is capable of shuttling at least two radially disposed sample elements into radially adjacent test sample element receiving ~~area~~ areas simultaneously.

19. (Currently Amended) An incubator as recited in Claim 15, including a supply of stacked sample slide elements, said shuttle mechanism means being disposed adjacent to a ~~slide~~ said sample element supply.

20. (Currently Amended) An incubator as recited in Claim [[3]] 62, wherein said at least one first drive mechanism includes a belt drive wrapped about the periphery of at least ~~one ring component~~ one of said inner and outer rings.

21. (Currently Amended) An incubator as recited in Claim [[3]] 62, wherein said ~~ring components of said ring assembly~~ inner and outer rings are independently driven relative to one another by said at least one first drive mechanism.

22. (Currently Amended) An incubator as recited in Claim [[4]] 62, wherein at least two load positions of a sample element receiving area differ in height relative to one another.

23. (Canceled).

24. (Canceled).

25. (Canceled).

26. (Canceled).

27. (Canceled).

28. (Canceled).

29. (Canceled).

30. (Canceled).

31. (Canceled).

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50. (Canceled).

51. (Canceled).

52. (Canceled).

53. (Canceled).

54. (Canceled).

55. (Canceled).

56. (Currently Amended) A method as recited in Claim [[55]] 63, including the additional steps of:

reading a first sample element which has been rotated into alignment with said a read station;

radially driving an adjacent second ~~test~~ sample element into alignment with said read station; and

reading said second sample element.

57. (Currently Amended) A method as recited in Claim 56, including the step of dumping each of said sample elements from said ring assembly inner ring after said reading steps.

58. (Currently Amended) A method as recited in Claim 57, including the step of loading new at least one sample ~~elements~~ element into said inner ring after said dumping step.

59. (Currently Amended) A method as recited in Claim 58, wherein said loading step includes the step of simultaneously radially shuttling at least two adjacent test sample elements into ~~a-said~~ radially adjacent sample element receiving ~~area~~ areas.

60. (Canceled).

61. (Canceled).

62. (New) A sequential tandem incubator for use in a clinical analyzer, said incubator comprising:

an inner ring and an outer ring, said outer ring including a first plurality of circumferentially disposed sample element receiving areas and said inner ring including a second plurality of circumferentially disposed sample element receiving areas, each of said first and second pluralities of sample element receiving areas being radially adjacent to one another on a common horizontal plane;

at least one first drive mechanism for driving at least one of said inner and outer rings rotationally; and

at least one second drive mechanism for selectively moving sample elements exclusively in a radial direction along said common horizontal plane between said first and second plurality of said circumferentially disposed sample element receiving areas in order to increase throughput of said incubator.

63. (New) A method of incubating and reading test sample elements using a sequential random incubator in a clinical analyzer, said sequential random incubator comprising an inner ring and an outer ring, said outer ring including a first plurality of circumferentially disposed sample element receiving areas and said inner ring including a second plurality of circumferentially disposed sample element

receiving areas, each of said first and second pluralities of sample element receiving areas being radially adjacent to one another on a common horizontal plane, said method comprising the steps of:

radially loading at least one sample element into an empty sample element receiving area;

rotating at least one of said inner and outer rings along the horizontal plane; and

moving said at least one sample element radially between said first and second pluralities of radially adjacent sample element receiving areas of said incubator along said common horizontal plane so as to improve the throughput of said incubator.

64. (New) An incubator as recited in Claim 17, wherein a plurality of shuttle mechanisms are disposed at predetermined circumferential locations adjacent to said inner and outer rings.

65. (New) An incubator as recited in Claim 64, wherein at least one shuttle mechanism is radially disposed on the interior of said inner ring.

66. (New) An incubator as recited in Claim 64, wherein each of said shuttle mechanisms include a reciprocating pusher blade capable of moving radially through each of said inner and outer rings.

67. (New) An incubator as recited in Claim 62, wherein said inner and outer rings are concentric about a single center axis.

68. (New) An incubator for use with a clinical analyzer, said incubator comprising:

at least one first linear row of sample element receiving areas;

at least one second linear row of sample element receiving areas, each of said

at least one first and second rows being parallel to one another in a common horizontal plane and disposed axially in a first horizontal direction;

at least one sample element shuttle mechanism for selectively moving at least one sample element into at least one empty sample element receiving area of at least one of said at least one first and second linear rows along a second horizontal direction that is orthogonal to said first horizontal direction along said common horizontal plane; and

at least one sample element receiving area drive mechanism for moving at least one of said at least one first and second rows of said sample element receiving areas in the first horizontal direction along said common horizontal plane, thereby enabling empty sample element receiving areas to be accessed by said at least one sample element drive mechanism.

69. (New) An incubator as recited in Claim 68, including a read station disposed in relation to one of said first and second rows of sample element receiving areas.

70. (New) An incubator as recited in Claim 69, including a dump station disposed in said second horizontal direction relative to at least one of said sample element shuttle mechanisms.

71. (New) An incubator as recited in Claim 70, including a dump station disposed in said second horizontal direction adjacent to said read station wherein at least one sample element shuttle mechanism is capable of pushing sample elements into said dump station along said second horizontal direction following a read procedure of at least one said sample element.